

IAP9 REC'D PCT/PTO 06 DEC 2009

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## English Translation of the Annex to the IPER

**CLAIMS**

1. Multi-way adjustment device for adjusting a rest portion of a seat, comprising a mounting plate (1), an adjustment part (7) to be coupled with the rest portion of the seat which is mounted so as to be displaceable relative to the mounting plate (1), and an adjusting unit (6) for displacing the adjustment part (7) relative to the mounting plate (1), which adjustment part (7) is coupled with mechanical energy storage means (5) in such a way that when the adjustment part (7) is displaced in a first adjustment direction (A) relative to the mounting plate (1), mechanical energy is absorbed by the mechanical energy storage means (5), whereas a movement of the adjusting part (7) in a second adjustment direction (B) relative to the mounting plate (1) is assisted by the release of mechanical energy previously absorbed by the mechanical energy storage means (5).
- 20 2. Multi-way adjustment device as claimed in claim 1, characterised in that the first adjustment direction (A) is essentially opposite to the second adjustment direction (B).
- 25 3. Multi-way adjustment device as claimed in claim 1 or 2, characterised in that the adjusting unit (6) is electro-mechanically operated.
- 30 4. Multi-way adjustment device as claimed in one of the preceding claims,

characterised in that  
the adjustment part (7) comprises a first end portion (2)  
to be coupled with the rest portion and a second end  
portion (4) to be coupled with the mechanical energy  
5 storage means (5).

5. Multi-way adjustment device as claimed in one of the  
preceding claims,  
characterised in that  
10 the mechanical energy storage means (5) are coupled on  
the one hand with the adjustment part (7) and on the  
other hand with the mounting plate (1).

6. Multi-way adjustment device as claimed in any one of  
15 the preceding claims,  
characterised in that  
the mechanical energy storage means has at least one  
resiliently elastic element (5) which absorbs mechanical  
energy when the adjustment part (7) is displaced in the  
20 first adjustment direction (A) and releases mechanical  
energy when the adjustment part (7) is adjusted in the  
second adjustment direction (B).

7. Multi-way adjustment device as claimed in claim 6,  
25 characterised in that  
the at least one resiliently elastic element (5) is  
designed and disposed so that it is tensioned as the  
adjustment part (7) is displaced in the first adjustment  
direction (A) and relaxed when the adjustment part (7) is  
30 displaced in the second adjustment direction (B).

8. Multi-way adjustment device as claimed in claim 5 or  
7,  
characterised in that  
35 the mechanical energy storage means comprises two

resiliently elastic elements (5), one of which resiliently elastic elements (5) is disposed along a longitudinal side of the adjustment part (7).

5 9. Multi-way adjustment device as claimed in claim 4 and one of claims 6 - 8,  
characterised in that

the at least one resiliently elastic element (5) is coupled on the one hand with the second end portion (4)  
10 of the adjusting part (7) and on the other hand with the mounting plate (1).

10. Multi-way adjustment device as claimed in one of the preceding claims,

15 characterised in that  
the adjusting part (7) is of an elongate design with a middle portion (3) disposed between a first end portion (2) and a second end portion (4) and the adjusting part (7) is mounted so as to be displaceable on the mounting 20 plate by means of the middle portion (3).

11. Multi-way adjustment device as claimed in claim 10,  
characterised in that

the first and second end portions (2, 4) of the  
25 adjustment device (7) have a bigger width than the middle portion (3).

12. Seat with a multi-way adjustment device as claimed in one of the preceding claims for adjusting a rest  
30 portion of a seat.

13. Use of a multi-way adjustment device as claimed in one of claims 1 - 11 for adjusting the rest width of a seat.

14. Adjustment device for a cable pull,  
with a housing (7), which cable pull (11, 12) is mounted  
so as to be displaceable relative to the housing (7), and  
having an adjusting unit (6) for displacing the cable  
5 pull (11, 12) relative to the housing (7),  
characterised in that  
the cable pull (11, 12) is coupled with mechanical energy  
storage means (5) so that when the cable pull (11, 12) is  
displaced in a first adjustment direction (A), mechanical  
10 energy is absorbed by the mechanical energy storage means  
(5), whereas a displacement of the cable pull (11, 12) in  
a second adjustment direction (B) is assisted by the  
release of mechanical energy previously stored by the  
mechanical energy storage means (5).  
15
15. Adjustment device as claimed in claim 14,  
characterised in that  
the cable pull is provided in the form of a Bowden wire  
and comprises a wire (12) mounted so as to be  
20 displaceable in a sleeve (11), which wire (12) is coupled  
with the mechanical energy storage means (5).
16. Adjustment device as claimed in claim 15,  
characterised in that  
25 the sleeve (11) is supported on the housing (7) of the  
adjustment device and the wire (12) is guided in the  
interior of the housing (7), where it is coupled with the  
mechanical energy storage means (5).  
30
17. Adjustment device as claimed in claim 15 or 16,  
characterised in that  
the first adjustment direction (A) corresponds to a  
slackening of the Bowden wire and the second adjustment  
direction (B) corresponds to a tensioning of the Bowden  
35 wire.

18. Adjustment device as claimed in one of claims 14-17,  
characterised in that  
the adjusting unit (6) is electrically operated.

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19. Adjustment device as claimed in one of claims 14-17,  
characterised in that  
the adjusting unit (6) can be manually operated.

10 20. Adjustment device as claimed in one of claims 14-19,  
characterised in that the mechanical energy storage means  
are coupled with the housing (7) of the adjustment  
device.

15 21. Adjustment device as claimed in one of claims 14-20,  
characterised in that  
the mechanical energy storage means comprise at least one  
resiliently elastic element (5) which absorbs mechanical  
energy when the cable pull (11, 12) is displaced in the  
20 first adjustment direction (A) and releases mechanical  
energy when the adjustment part (7) is displaced in the  
second adjustment direction (B).

22. Adjustment device as claimed in claim 21,  
25 characterised in that  
the at least one resiliently elastic element (5) is  
designed and disposed so that it is tensioned when the  
cable pull (11, 12) is displaced in the first adjustment  
direction (A) and relaxed when the cable pull (11, 12) is  
30 displaced in the second adjustment direction (B).

23. Lumbar support comprising a Bowden wire coupled  
therewith and an adjustment device as claimed in one of  
claims 14-22 coupled with the Bowden wire for adjusting  
35 the lumbar support by displacing the Bowden wire.

24. Use of an adjustment device as claimed in one of claims 14-22 for adjusting a lumbar support.